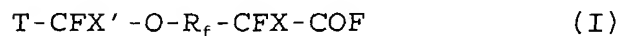


## CLAIMS

1. A process for the preparation of perfluoropolyethers having at least one -COF end group of formula:

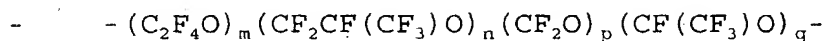


wherein:

T is equal to COF, F, C<sub>1</sub>-C<sub>3</sub> perfluoroalkyl;

X, X', equal to or different from each other, are F or -CF<sub>3</sub>;

R<sub>f</sub> is selected from:



wherein:

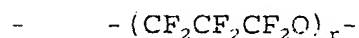
the sum n+m+p+q ranges from 2 to 200,

the (p+q)/(m+n+p+q) ratio is lower than or equal to 10:100, preferably comprised between 0.5:100 and 4:100,

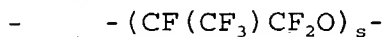
the n/m ratio ranges from 0.2 to 6, preferably from 0.5 to 3;

m, n, p, q, are equal to or different from each other and when m, n range from 1 to 100, preferably from 1 to 80, then p, q range from 0 to 80, preferably from 0 to 50;

the units with n, m, p, q indexes being statistically distributed along the chain,



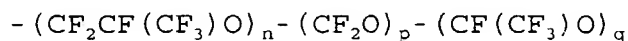
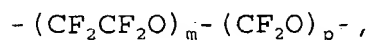
wherein  $r$  ranges from 2 to 200,



wherein  $s$  ranges from 2 to 200,

by reduction of the corresponding perfluoropolyethers containing peroxidic bonds, using gaseous hydrogen in the presence of a catalyst comprising metals of the VIII group supported on metal fluorides, optionally in the presence of perfluorinated solvents inert at a temperature from 20°C to 140°C, preferably from 80°C to 130°C and at a pressure between 1 and 50 atm, preferably between 1 and 10 atm.

2. A process according to claim 1, wherein  $R_f$  is selected in the group formed by:



3. A process according to claims 1-2, wherein the metal of the VIII group is Pd, Pt, Rh, preferably Pd.
4. A process according to claims 1-3, wherein the metal fluoride is selected in the group consisting of  $\text{CaF}_2$ ,  $\text{BaF}_2$ ,  $\text{MgF}_2$ ,  $\text{AlF}_3$ , preferably  $\text{CaF}_2$ .
5. A process according to claims 1-4, wherein the concentration of the VIII group metal on the metal fluoride is comprised between 0.1% and 10% with respect to the catalyst total weight, preferably between 1% and

2% by weight.

6. A process according to claims 1-5, wherein the used catalyst amount is in the range 1%-10%, preferably 1%-5% by weight with respect to the peroxidic perfluoropolyether.